

# ON THE BIRDS OF THE KEY AND SOUTH-EAST ISLANDS, AND OF CERAM-LAUT.

By ERNST HARTERT.

(Continued from Vol. VIII., 1901).

IN Volume VIII. of *NOVITATES ZOOLOGICAE*, on p. 1, I began the account of the collections of birds made by Mr. Heinrich Kühn on the Key group, the so-called South-East Islands (Tiandoe, Taam, Manggoer, Koer, Teoor, Watoebela, Manawoka, Goram-lant, and Ceram-laut). The introduction and the enumeration of the *Pittidae* and *Psittaci* filled pages 1 to 5. The work was continued with the list of the *Columbae*, *Megapodiidae*, *Turnicidae*, *Rallidae*, *Alcedinidae*, *Laridae*, *Podicipidae*, *Ibidac*, *Platuleidae* and *Limicolae* on pages 93—101. Between Nos. 53 and 54 (p. 99) the heading "XII. LIMICOLAE" has been omitted. The present article concludes the work with the review of the *Accipitres*, *Cuculi*, *Coraciidae*, *Caprimulgidae*, *Cypselidae*, all the *Passeres*, the *Anatidae*, and *Steganopodes*, bringing the total up to 151 species and subspecies. It must, however, be understood that this is only a list of what Mr. Kühn collected on these islands. Occasionally I have mentioned species recorded in the literature, but not obtained by Mr. Kühn; but no attempt has been made to complete their number. As, however, Mr. Kühn's collections are very rich in species, the number of birds missed by him will doubtless be very small and not alter the aspect of the ornis as given by my articles. Though very little is evidently to be added to our knowledge of the species inhabiting these islands, our information of their life-history and nidification is still very incomplete.

## XIII. ACCIPITRES.

### 70. *Pandion haliaëtus leucocephalus* Gould.

Toeal, common.

Soa, islet near Little Key Island. (No. 139.)

Ondor, Goram-lant. (No. 2199.)

Taam. (No. 1376.)

Teoor. (No. 1501.)

Kisoei. (No. 2090.)

Maar, Ceram-laut. (No. 2032.)

### 71. *Haliaëtus leucogaster* (Gm.).

Toeal, Soa, near Little Key.

♂ juv., Kisoei, 8. iii. 1900. (No. 2123.)

### 72. *Haliastur indus girrenera* (Vieill.).

Toeal. (Kühn coll., No. 813; Webster coll., No. 78.)

Ugilgot, Little Key. (Kühn coll., No. 812.)

♂ ♀, Teoor, October 1899. (Nos. 1502, 1504.)

73. *Baza subcristata reinwardti* (Müll & Schleg.).

(Cf. Nov. Zool. 1901. p. 379.)

Total, two specimens.

♀, Gorom, Manawoka, 14. xi. 1899. (Kühn coll., No. 1763.)

74. *Astur albiventris* (Salvad.)*Urospizias albicentris* Salvadori, *Ann. Mus. Civ. Gen.* vii. p. 983. 1875 (Key Islands; *typus* Weri, Great Key).

4 ♂ ad., 4 ♀ ad., ♂ juv., Total, Oeboer, Oen, and Ohoitil, Little Key. (Kühn coll., Nos. 183, 251, 269, 361, 361A, 412, 524, 574, 824; Capt. Webster coll., No. 47.)

“Iris orange of various shades in the adult, sulphur-yellow in the young; feet ochreous; bill black.” (H. Kühn.)

♂ ♀ ad., Manggoer Island, 8. x. 1879.

♂, “Iris golden yellow”; ♀, “Iris red-orange, nearly red.” (Kühn coll., Nos. 1413, 1414.)

While the Key birds are very constant among themselves, these two Manggoer birds differ somewhat. Their wings are about  $\frac{1}{2}$  cm. longer; the *male* has distinct bars on the inner rectrices, of which hardly a trace is ever found in typical *albicentris*, but the *female* has no such bars. The *male* is distinctly, the *female* scarcely, darker above. They are not at all like *Astur polionotus* (Salvad.), which is still darker above, has a very wide collar, always distinct bars to the central rectrices, and the *female* of which is always brighter and narrowly barred on the underside. More material may perhaps show that the Manggoer form is separable, but at present it cannot be separated from the one pair before me.

In the Key Islands specimens the reddish collar on the upperside is well visible in the *males*, but only faintly indicated or absent in the *females*.

75. *Astur meyerianus* Sharpe.*Astur meyerianus* Sharpe, *Journ. Linn. Soc. London* xiii. p. 458. Pl. XXII. (Jobi).

Mr. Kühn obtained a bird marked “♂” on Maar, Ceram-laut, on December 17th, 1899. He marked the iris as chromeous, feet sulphureous, bill slate-grey.

This bird, which I believe to be fully adult, agrees perfectly with Dr. Sharpe's description of *Astur meyerianus*, except that it is more distinctly, though not quite regularly, barred with black all over the breast and abdomen. The black shafts on the underside are very conspicuous. The feathers on the sides of the neck are black with white tips, the under wing-coverts white with black shafts, and some with black bars. The feathers on the hindneck have snow-white bases, those on the head and back brownish grey ones. The tail is above black with a dirty white tip, as in the type. There is apparently nothing in which this specimen differs from the type of *A. meyerianus*, except the somewhat greater amount of black barring on the under surface. The measurements agree wonderfully with those of the type, as given by Dr. Sharpe. Whether the Jobi example and this are entirely the same cannot be decided from these two single individuals. I do not understand what it has to do with *A. albigularis* from the Solomons, of which even the *female* is about one-third smaller, and which differs in many colour details. If Mr. Kühn sexed the bird correctly, the *female* must be expected to be of the size of the European goshawk, while that of *A. albigularis* is not bigger than that of *Accipiter nisus*, though it is an *Astur*, with large bill and shorter and stronger feet.

76. *Cerchneis moluccensis* (Jacq. & Pueh.).

This widely spread species does not extend its area down to the Key Islands, but it occurs on the northern South-East Islands, where it was already, many years ago, found on Gorom by Rosenberg and Wallace. Mr. Kühn sent the following specimens :—

♀, Gorom, Manawoka, 14. xi. 1899. (No. 1655.)

♀, Maar Island, Ceram-laut group, 16. xii. 1899. (No. 1753.)

♀, Ondor, Goram-laut Islands, 1. iii. 1900. (No. 2177.)

77. *Falco lunulatus* Lath.

♀ juv., Toeal, Key Islands, 5. viii. 1898.

"Iris bright yellow, feet ochreous, bill ash-grey." (Kühn coll., No. 839.)

This species is apparently only a migrant or straggler to the Moluccas and Sunda Islands, where it has occurred at Ceram, Ternate and Amboina, Timor (Everett coll.) and Flores, and to the Key Islands. This example obtained by Kühn is apparently the only one known from the Key Islands.

(We have received no owls from any of these islands. Salvadori's *Ornitologia della Papuasia e delle Molucche* mentions also not a single species of owls from the Key and S.E. Islands).

## XIV. CUCULI.

78. *Centropus spilopterus* Gray.

*Centropus spilopterus* G. R. Gray, *Proc. Zool. Soc.* 1858. p. 184 (Key Is.).

One nestling from Noekoe Roa, Little Key group, 7. vii. 1900.

Evidently not rare near Toeal, Little Key. The iris of the adult birds is vermilion or scarlet, that of the young brown. The young are above widely, though not very frequently, barred with whitish isabelline. The adult birds have sometimes (while otherwise being uniform metallic greenish black) barred remiges, but sometimes quite uniform blackish ones. The latter ones are apparently the oldest birds. The *female* is considerably larger than the *male*.

The chalky white egg measures  $36 \times 26.7$  mm.

79. *Eudynamis orientalis everetti* Hart.

*Eudynamis cyanocephala everetti* Hartert, Nov. Zool. 1900. p. 231 (Sumba to Key, etc. ; type Sumba).

1 (supposed ♀ ad., not sexed), Key Island, 6. i. 1896. (C. Webster coll., No. 14.)

1 "♂," nearly adult, but with a few pale rufous feathers of the juvenile plumage still visible underneath, Ohimas, Little Key Islands, 5. iv. 1898. (H. Kühn coll., No. 723.) The remains of the juvenile plumage seem pale, therefore I am inclined to place the bird with *everetti*, though doubtfully.

1 "♂," Soa, Little Key group, 7. iv. 1898. "Iris vermilion." (H. Kühn coll., No. 716.) Underside pale cinnamon, crown and hindneck nearly uniform glossy black ; upperside with small, mostly white or whitish spots (? ♀ or ♂ juv.).

1 "♀," Add, north of Great Key, 1. viii. 1900. "Iris scarlet." (H. Kühn coll., No. 2803.) Underside white, head and upperside as that of No. 716.

2 ♂ ad., Add, 8. 30. vii. 1900. (H. Kühn coll., Nos. 2800, 2802.)

1 ♂, 1 ♀ (not sexed), Key Islands, 6. 16. i. 1896. (C. Webster coll.)

1 ♂ (not sexed), moulting from the juvenile cinnamon buff plumage to the black of the adult bird, Key, 17. i. 1896. C. Webster coll.

1 ♂ ad., Soa, Little Key group, 11. vii. 1898. (H. Kühn coll., No. 817.)

1 ♂ ad., Elat, Great Key group, 22. ix. 1897. (H. Kühn coll.)

1 ♂ ad., Taam Island, 23. vii. 1899. (H. Kühn coll., No. 1362.)

1 "♀" (? ♂ juv.), 2 ♂ juv. (moulting from the juv. cinnamon-buff to the black plumage), 3 ♂ ad. (entirely black), Teoor, October 1899. (H. Kühn coll., Nos. 1468, 1472, 1479, 1490, 1542, 1554.)

1 "♂," Kisoei, 3. iii. 1900. (H. Kühn coll., No. 2113.) In moult: moulting underneath from the creamy white first (nestling) plumage to a rich cinnamon-buff one, above from a barred cinnamon-buff one to a black one with whitish buff spots (? ♀!).

1 ♀ ad., Gorom, Manawoka group, 11. xi. 1899. (H. Kühn coll., No. 1654.)

#### 80. *Eudynamis orientalis orientalis* (L.).

1 "♀," Kisoei Island, 3. iii. 1900. "Iris scarlet, feet bright plumbeous, bill greenish white." A **very** typical, huge *orientalis*. Probably a stray bird from the Southern Moluccas (Ceram), while the real form of the South-East Islands is *E. o. everetti*.

#### NOTES ON THE GENUS *EUDYNAMIS*.

The various forms of the genus *Eudynamis* are doubtless very difficult to understand. Though there is clearly no difficulty about those inhabiting India, the Malayan Islands and the Philippines, inasmuch as it is admitted that only one form occupies each area, the conclusions about the distribution in New Guinea, the Moluccas, etc., are not always quite the same. Count Salvadori\* has *E. orientalis* on the Moluccas, to the Key Islands, *E. cyanocephala* in Australia, S.E. New Guinea, *E. ruficenter* in (Dutch) New Guinea, Batanta, Mysol. Shelley† distributes *E. orientalis* over the Moluccas, *E. cyanocephala* from Australia and New Guinea to Timor, *E. ruficenter* over New Guinea and the Papuan Islands. Finsch‡ says "*E. honorata*: India to the Eastern Moluccas (Halmahera, Ternate, Tidore, Mare, Motir, Batjan). *E. ruficenter*: New Guinea, Salwatty, Bismarck-Archipelago. *E. cyanocephala*: Australia, S.E. New Guinea, Timor, Wetter, Alor, Aru, Key, Goram, Banda, Amboina. *E. orientalis*: Buru, Manipa, Kelang, Amboina, Ceram." In the same year I acknowledged§:—

*Eudynamis honorata honorata*: India to China.

" " *malayana*: Malay Archipelago.

" " *mindanensis*: Philippines to Sanghir.

" *orientalis orientalis*: Moluccan Islands only.

" " *ruficenter*: New Guinea and some of the Papuan Islands.

" " *salvadorii*: New Britain and New Ireland.

" *cyanocephala cyanocephala*: Australia (? to New Guinea).

" " *everetti*: Key Islands, Lesser Sunda Islands, and probably parts of New Guinea.

*Orn. Pap.* i. pp. 359—370.

† *Cat. B. Brit. Mus.* xix. pp. 322—326.

‡ *Notes Leyden Museum* xxii. pp. 100—112, 1900.

§ *Nov. Zool.* 1900. pp. 231—232.

With regard to the differences of the *females* we all agree more or less, inasmuch as we consider the *females* and young of *E. orientalis* to be deeper rufous cinnamon below, with larger, less numerous, and always cinnamon-rufous (not whitish) spots above, and with wider rufous-cinnamon bars on wings and tail, while those of *E. cyanocephalus* are less rufous beneath, have much more numerous, smaller, and more or less whitish spots above, narrower and more buffy bars on wings and tail. Most authors, however, have been more or less uncertain, about the *males* especially. Shelley gives no key to the *males* of *orientalis*, *cyanocephala*, and *ruficenter*. Finsch (p. 101) admits that in many instances the adult black *males* are not distinguishable. I have said exactly the same with regard to those of *E. cyanocephala everetti* and *E. orientalis ruficenter* (p. 232). Nobody will consider the present status as an entirely satisfactory one, and I believe it is not maintainable. I have come to the following conclusions.

Although the *females* of most of the forms are rather different, they pass, in some instances, through a stage almost perfectly similar to that of other forms. It is not probably true, that any two forms breed in the same area. Their alleged occurrences in the same places are partly erroneous, partly exceptional cases of stray birds. Therefore it is more logical to treat nearly all the forms of the genus as subspecies of one species, to be called *E. orientalis*, which is the oldest name in the genus. They may thus be distinguished as follows:—

### 1.

♀. Crown of head with longitudinal whitish spots; tail with narrow whitish bars; underside whitish, thickly and widely barred with glossy blackish brown.

♂ ad. With a somewhat greenish gloss, wing about 187—197 mm.

Nestling black; immature birds more rufous than adult *females*.

1.—*Eudynamis orientalis honoratus* (L.).

*Cuculus honoratus* Linn., *Syst. Nat.* ed. xii. 1766. p. 169 (ex Brisson : habitat in Malabar!).

India, Ceylon, Andamans, Nicobars, east to China.

### 2.

Exactly like *E. orientalis honoratus*, but a little larger; ♀ generally more rufescent, not so white. Nestlings black. Wing of ♂ ad. about 198—220 mm.

2.—*Eudynamis orientalis malayana* Cab. & Heine.

*Eudynamis malayana* Cab. & Heine, *Mus. Hein.* iv. p. 52 (1862).

Sunda Islands.

### 3.

Very similar to *E. o. honoratus* and *E. o. malayana*, but ♀ still more rufous as a rule, bars underneath narrower. Wing of ♂ ad. about 192—200 mm. Nestling black. In this form as well as in *E. o. honoratus* and *malayana* the rufescent bars on the tail (and wings) are very much wider in the young, much more narrow in the adult *females*. This is an important character for the understanding of the Papuan and Moluccan forms.

3.—*Eudynamis orientalis mindanensis* (L.).

*Cuculus mindanensis* Linn. *Syst. Nat.* ed. vii. p. 169. 1766 (ex Brisson : Mindanao).

Philippine Islands to Sanghir.



## 4.

Very large form. ♀ with fewer, larger, rufous cinnamon spots above, bars on wings and tail never very narrow, underside cinnamon, with narrow, few and often hardly any bars, head apparently never uniform black. Nestling cinnamon-buff. ♂ ad., wing about 213—220 mm.

4.—*Eudynamis orientalis orientalis* (L.).

*Cuculus orientalis* Linn., *Syst. Nat.* ed. xii. 1766. p. 168 (ex Brisson : India oriental.! I accept Amboina as the typical locality. I am not desirous to change this name, but it seems to me somewhat hazardous to accept Linnaeus' name for the Moluccan *Eudynamis*, although Brisson's figure and description agree perhaps better with it than with any other form of the genus).

Southern Moluccas only : Buru, Manipa, Kelang, Amboina, Ceram, and a specimen from Kisoei, Watoebela group, South-East Islands, in the Tring Museum, the latter probably a stray bird. I do not think that it occurs on the Key Islands, nor is the locality Lombok (*British Mus. Cat.* xix. p. 323) correct.

## 5.

♀ ad. Crown of head uniform black or very little spotted with rufous, chin and upper throat black, or very little streaked, on the sides of the black throat a buff moustachial line ; rufous bars on tail and wings much narrower and paler ; upper surface with numerous small whitish or pale buff roundish spots. Wing of ad. ♂ about 200—215 mm. Nestling cinnamon-buff.

5.—*Eudynamis orientalis everetti* Hart.

*Eudynamis cyanocephala everetti* Hartert, Nov. Zool. 1900. p. 231 (Sumba, type locality, Timor, Alor, Wetter, Moa, Key and South-East Islands. This distribution is a strange one, but I cannot separate specimens from these various places, and through Wetter and Moa a partial bridge is laid from the Lesser Sunda Islands to the Key group. Dr. Finsch, by stating *cyanocephala* to occur on Key, Wetter, Alor, entirely confirms my view. The young birds have the cinnamon-rufous bars on wings and tail as wide as in *E. o. orientalis*, and are easily mistaken for the latter, but are smaller).

## 6.

Perfectly like *E. o. everetti*, only larger. ♂ wing 216—222 mm. at least.

6.—*Eudynamis orientalis cyanocephalus* (Lath.).

*Cuculus cyanocephalus* Latham, *Ind. Orn. Suppl.* ii. p. 30 (1801 : Australia).

Australia, and perhaps Southern New Guinea.

## 7.

Very small form. Chin and upper throat of ♀ ad. streaked black and rufous. Wing of ♂ about 185—196 mm. ♀ apparently always very rufous spotted, the spots not so large as and more numerous than in *E. o. orientalis*, but of the same colour.

7.—*Eudynamis orientalis rufiventer* (Less.).

*Cuculus rufiventer* Lesson, *Voy. Coqu.*, Zool. i. p. 623 (1828: New Guinea. I accept as the typical locality Dorey).

New Guinea and some of the adjacent islands (Salwatty, Batanta, Mysol, and probably Aru). All New Guinea specimens before me seem to belong to this form, and I am inclined to think that no others occur in Papua, except perhaps in the S.E. (?).

8.

Exactly like *E. o. rufiventer*, but larger. The adult *males* are apparently somewhat less greenish, more bluish. Wing of *males* about 203—210 mm.

8.—*Eudynamis orientalis salvadorii* Hart.

*Eudynamis orientalis salvadorii* Hartert, Nov. Zool. 1900. p. 232 (Type from New Ireland).

New Britain and New Ireland.

The adult *male* of this form resembles entirely that of *E. o. orientalis*, but the *female* is much more frequently spotted above, the under surface is lighter.

9.

Bill of the *male* black, thus distinguished from all the other forms.

9.—*Eudynamis orientalis melanorhyncha* S. Müll.

*Eudynamis melanorhyncha* S. Müller, *Verh. Nat. Gesch. Ned. Ind., Land-en Volkenk.* p. 176 (1839–44: Celebes).

Inhabits Celebes and (according to Meyer and Wigglesworth) Peling (between Celebes and Sula).

10.

Exactly like *E. o. melanorhyncha*, but differs at a glance by its smaller size, and the *males* mostly by white markings on the chin and forehead, as shown by me in Nov. Zool. 1898. p. 127.

10.—*Eudynamis orientalis facialis* Wall.

*Eudynamis facialis*, Wallace, *Proc. Zool. Soc. London* 1862. p. 339 (Sula).

Inhabits the Sula Islands, east of Celebes.

I am sure that some of my ornithological friends will not agree with the present arrangement, but I predict that it will be the arrangement of the future, being much more natural than any other hitherto attempted. There are probably one or two errors in it, but they will then be corrected, and there are perhaps even still more forms that are separable—for example, a series from the Andamans should be compared with typical *honoratus*—but completeness cannot easily be reached at present, and we must be content to conclude as far as our material reaches at the time.

81. *Cuculus saturatus* Blyth.

“♀” ad., Teoor, 2. xi. 1899. (H. Kühn coll., No. 1478.)

♂♀. juv., Toeal, Little Key Islands, October and March. (Nos. 247, 585.)

82. *Scythrops novaehollandiae*.

Toeal, Little Key Islands.

83. *Cacomantis insperatus* Gould.

5 ad., 3 juv., Toeal, Key Islands. (H. Kühn coll., Nos. 207, 405, 465, 466, 467, 472, 666, 781.)

1 ♀ juv., Add, north of Great Key, 26. vii. 1900. (No. 2787.)

1 ♂ ad., Kisoei, 4. iii. 1900. (No. 2074.) "Iris yellowish grey; feet pale ochreous; bill black, under mandible brown, with black tip." (H. Kühn.)

2 ♂ ad., 1 ♀ ad., Teoor, October—November 1899. (Nos. 1518, 1556, 1560.)

2 ♂ ad., 1 ♀ juv., Gorom, Manawoka group, November 1899.

I have several times before alluded to the fact that Gould's name *insperatus* can very well be accepted for this bird, because his description and figures agree, and his original measurement (wing  $6\frac{1}{2}$  inches) must be a clerical error.

84. *Cacomantis castaneiventris* Gould.

We have not received this species from the Key Islands, nor have former collectors found it there. Dr. Finsch, however (*Notes Leyden Museum* xxii. p. 82) mentions a "younger bird" from Key. It is quite possible that such a distinct species as *C. castaneiventris* might occur together with *C. insperatus*, but as Dr. Finsch mentions only one *immature* specimen, the case is perhaps worth further attention.

In no case can I agree to Dr. Finsch's proposal to replace the name *castaneiventris* by *C. infaustus* Cab. & Heine (*Mus. Hein.* iv. 1863. p. 23, ex Mysol). The description of *C. infaustus* in my opinion suits *C. insperatus* and not *C. castaneiventris* ("pectoris ventrisque plumis cinerascentibus, crissum versus latius latiusque rufescente limbatis, crisso tectricibusque subcandalibus rufescentibus," etc.). Moreover, *C. insperatus* is the common bird of Mysol (and the Key Islands), while only the Leyden Museum has *castaneiventris* from that island. *C. infaustus* is therefore a synonym of *C. insperatus* = *dumetorum* = *assimilis*.

85. *Cacomantis variolosus* (Vig. & Horsf.).

*Cuculus variolosus* Vigors & Horsfield, *Trans. Linn. Soc.* xv. p. 300 (1826, young bird, Australia, type examined).

*Cuculus tymbonomus* S. Müller, *Ver. Nat. Gesch., Land- u. Volkenk.* p. 177 (1839-44: Timor).

1 ♂ ad., Pulu Nai, Key Islands, 27. ix. 1899. "Iris ash-grey; feet dirty ochreous; bill black, under bill with base yellowish." (No. 1398.)

1 ♀ juv., Maar, Ceram-laut Islands, 16. xii. 1899. (No. 1689.)

These specimens agree perfectly with Australian *variolosus*. Dr. Finsch, following Salvadori and other authorities, has accepted the name *tymbonomus*, but *variolosus* is undoubtedly the oldest name.

86. *Misocalius osculans* Gould.

Collected on the Key Islands by Hoedt (Mns. Leyden). I believe it is correct to reject the name *palliolatus*, Latham's description being unsuitable.

87. *Chalcococcyx crassirostris* (Salvad.)

*Lamprococcyx crassirostris* Salvadori, *Ann. Mus. Civ. Gen.* xiii. p. 460 (Toeal).

2 ♂ ♂, 1 ♀ ad., Toeal, Little Key Islands. (Nos. 18, 133, 539.)

2 ♀ med., Toeal, Little Key Islands, 2. ix. 1897; 20. ix. 1899. (Nos. 49, 181.)

1 ♀ juv., Toeal, Little Key Islands, 22. iv. 1898. (No. 754.)



1 ♂ juv., Roemadan, Little Key group, 9. iv. 1898. (No. 647.)

2 ♂ ad., Kilsoein, Koer group, June—July 1899. (Nos. 1208, 1280.)

1 ♀ ad., Taam Island, 28. vii. 1899. (No. 1327.)

*Ch. crassirostris* is a rare bird in collections, and not always correctly described. The adult *male* and *female* (if correctly sexed) is above of a deep beautiful steel-blue to a dark metallic bronzy green. These blue and green birds are the same, as distinctly shown by some partially blue and green ones. A large white patch on the wing. Underside white, only on the thighs and flanks with a few bars. These bars are apparently not more, but rather less, developed in the oldest birds. The lateral rectrices with the outer web almost quite white, inner web white with the base widely and two very broad bars steel blue, or greenish blue. The other pairs without a trace of rufous in the old birds. The young bird in first full plumage is above uniform pale cinnamon, below white with or without a few faint bars. Tail above, pale cinnamon like the back. Between these two plumages is evidently an intermediate one which is above metallic bronzy greenish, below white with brown bars, though (if we accept that No. 539 is wrongly sexed) these might just as well be the adult *females*, both our specimens in this plumage (Nos. 49 and 181) being marked “♀”; both have rufous cinnamon edges to the upper wing-coverts.

#### 88. *Chalcococcyx poecilurus* (Gray).

*Chrysococcyx poecilurus*, G. R. Gray, *Proc. Zool. Soc. London* 1861. pp. 431, 437 (Mysol and New Guinea: type from Mysol, in the Brit. Mus.).

1 ♀ imm., Add, north of Great Key, 1. viii. 1900. (H. Kühn coll., No. 2788.)

This specimen has certainly nothing to do with *C. crassirostris*, and I have no doubt belongs to *C. poecilurus*, though it would be desirable to examine adult examples. The wing is longer, the bill smaller, the markings in the tail different from those of *C. crassirostris*, and the upperside is pale greenish.

### XV. CORACIIDAE.

#### 89. *Eurystomus orientalis australis* Swains.

Toeal, Little Key, April and September. ♂ juv. in first plumage, 18. iv. 1898. (No. 746.)

Gorom, Manawoka, 12. xi. 1899. (No. 1648.)

Tecor, 20. x. 1899. (No. 1456.)

### XVI. CAPRIMULGIDAE.

#### 90. *Caprimulgus macrurus macrurus* Horsf.

Common at Toeal, Little Key.

1 ♂, Maar I., Ceram-laut group, 15. xii. 1899. (Kühn coll., No. 1684.)

### XVII. CYPSELIDAE.

#### 91. *Collocalia fuciphaga* (Thunb.).

4 Toeal, April 1898. (H. Kühn coll., Nos. 752, 753, 771, 772.)

2 Ohoitil, Little Key, February 1898. (Kühn coll., Nos. 571, 572.)

5 Kilsoein, Koer group, June—July 1899. (Kühn coll., Nos. 1222, 1226, 1227, 1257, 1285.)

92. *Collocalia esculenta* (L.).

♀ ad., Kilsœin, Koer group, 30. vi. 1899. (Kühn coll., No. 1256.)

## XVIII. HIRUNDINIDAE.

93. *Petrochelidon nigricans* (Vieill.).

*Hirundo nigricans* Vieillot, *Nouv. Dict. d'Hist. Nat.* xiv. p. 523 (1817 : Australia).

♂, Toeal, 15. ix. 1897. (No. 88.)

94. *Hirundo rustica gutturalis* (Scop.).

Toeal, January, March, October, November, December (common).

Ohoitil, Little Key group, 2. ii. 1898. (No. 570.)

Teoor, October, November. Common. (Nos. 1491, 1492, 1494, 1499, 1539, 1558.)

2 ♂ ad., 1 ♀ ad., Ondor, Gorom-lant, February 1900. (Nos. 2148—2150.)

1 ♀ ad., 3 juv., Maar, Ceram-lant, December 1899. (Nos. 1728, 1729, 1746.)

## XIX. MUSCICAPIDAE.

95. *Monarcha leucura* Gray.

*Monarcha leucura* G. R. Gray, *P. Z. S.* 1858. p. 178 (Key Islands).

Very common at Toeal, Little Key. "Iris of the darkest brown (black), bill and feet blue-grey." (H. Kühn coll., Nos. 129, 129A, 266, 267, 287, 448, 456, 462, 509, 534, 751.)

The adult *female* is like the adult *male*—*i.e.*, blue-black, breast, abdomen, under wing- and under tail-coverts as well as the four outer rectrices white. The *female* is only a little smaller, the wing being about 4 mm. shorter. The young *male* and *female*, however, is above ashy-brown, the head grey, chin and middle of the throat greyish; rest of foreneck, chest, sides of breast and of abdomen, bright cinnamon-rufous; middle of abdomen, vent and under tail-coverts, white; tail black, lateral rectrices white.

2 ♂ ad., 1 ♀ ad., 1 juv., Add, north of Great Key. (H. Kühn coll., Nos. 2768, 2769, 2770, 2780.)

1 ♂ ad., Elat, Great Key, February 1897. W. Doherty coll. Evidently restricted to the Key group.

96. *Monarcha nigrimentum* Gray.

*Monarcha nigrimentum* G. R. Gray, *P. Z. S.* 1860. p. 352 (Amboina.)

2 ♂ ad., 1 ♀ ad., 1 juv., Ondor, Goram-lant, February 1900. "Iris of the darkest brown, feet dark bluish grey, bill dark grey." (H. Kühn coll., Nos. 2140—2143.)

♂ ♀ ad. and juv., Kisoei, March 1900. (H. Kühn, Nos. 2075—2080.)

1 ♀ ad., Gorom, Manawoka, 11. xi. 1899. (No. 1620.)

The sexes and young are correctly described in the *Cat. B.* iv. p. 418. The adult *female* is like the adult *male*, only a little smaller.

97. *Monarcha castus* Sel.

*Monarcha castus* Selater, P. Z. S. 1883. p. 53 (Tenimber or Timor-laut Is.).

4 ♂ ad., 2 ♀ ♀, 2 juv., Kilsoein in the Koer group, June—July 1899. ♂ ad.: "Iris deep brown (black), feet dark ash-grey, bill bright grey." (H. Kühn coll., Nos. 1192, 1198, 1199, 1200, 1218, 1235, 1236, 1302.)

I am not a little surprised to find *M. castus*, hitherto only known from Tenimber, on Kilsoein in the Koer group. I cannot, however, see any differences between our Tenimber and Kilsoein specimens.

Probably *M. castus* and *M. buruensis* Meyer from Burn should be treated as subspecies of *M. pileatus* from Halmahera, but I am unfortunately not able to compare the latter bird, of which only the types in the Leyden Museum seem to be known.

In the new *Hand-list*, Vol. III. p. 281, Dr. Sharpe gives as the habitat of *M. pileatus* "Halmahera and Burn." This cannot be correct, *M. buruensis* (which he also mentions) being the Burn representative of *M. pileatus*. The use of trinomials would doubtless have avoided this error.

98. *Monarcha inornatus kisserensis* Meyer.

*Monarcha kisserensis* A. B. Meyer, *Sitzungsber. und Abh. Isis, Dresden* 1884. p. 227.

4 ♂ ad., 1 ♀ ad., 1 juv., Toel. (Nos. 151, 158, 195, 239, 589, 639.)

1 Elat, Great Key. (Doherty coll.)

1 ♀ ad., Add, north of Great Key, 29. vii. 1900. (No. 2806.)

4 ♂ ♂, 1 ♀, 1 ♀ (?) (with albinistic bill and feet), Teoor, October—November 1899. (Nos. 1540, 1544, 1557, 1575, 1581, 1583.)

1 ♀ ad., Kisoei, 9. iii. 1900. (No. 2081.)

1 ♂, Goram, Manawoka group, 13. xi. 1899. (No. 1598.)

3 ♂ ♂, 2 ♀ ♀, Maar, Ceram-laut, December 1899. (Nos. 1695, 1696, 1724, 1725, 1743.)

All these specimens belong to the light form, *M. i. kisserensis* Meyer, the typical dark one being from Papua.

99. *Rhipidura tricolor* (Vieill.)

*Muscicapa tricolor* Vieillot, *Nouv. Dict.* xxi. p. 430 (1818: Timor, errore.)

4 ♂ ♂, 1 ♀, Maar, Ceram-laut group, December 1899. (Nos. 1749, 1750, 1751, 2026, 2027.)

2 ♂ ♂, Gorom, Manawoka, November 1899. (Nos. 1610, 1640.)

3 ♀ ♀, Ondor, Goram-laut, February 1900. (Nos. 2135—2137.)

♀, Teoor, March 1900. (No. 2129.)

Seems to be absent from the Key group.

100. *Rhipidura setosa assimilis* Gray.

*Rhipidura assimilis* G. R. Gray, P. Z. S. 1858. pp. 176, 192 (Key Islands).

Toel, common. (Nos. 78, 445, 457, 493, 641 in Mus. Tring.)

Add, north of Great Key, July 1900. (Nos. 2771—2774.)

Kisoei, March 1900. (Nos. 2084—2089.)

Koer Island, 11. x. 1899. (No. 1408.)

Kilsoein, Koer group, June—July 1899. (Nos. 1194, 1209, 1215, 1217, 1219, 1258.)

Teoor, October—November 1899. (Nos. 1450, 1452, 1469, 1527, 1550, 1551, 1552, 1559, 1576, 1579.)

Taam, July 1899. (Nos. 1349, 1352, 1364, 1361, 1371.) "Iris dark brown, bill and feet black."

Although easily distinguished from *Rh. setosa setosa*, this is, no doubt, a representative form of the latter.

### 101. *Rhipidura squamata* Müll.

*Rhipidura squamata* S. Müller, *Verh. Nat. Gesch., Land- u. Volkenkunde* p. 184 (1839-44 : Banda).

♂ ♀, Soa Island, Little Key group, 10. vii. 1898. (Nos. 807, 808.)

♂, Cape Ngidioen, Little Key Islands W., 20. v. 1898. (No. 794.)

♀, Roemadan, Little Key Islands, 9. iv. 1898. (No. 686.)

♂, Godan Island, Little Key Islands, 18. v. 1898. (No. 796.)

♂, Ohimas Island, Little Key Islands, 5. iv. 1898. (No. 685.)

3 ♀ ♀, Kilsoein, in the Koer group, June—July 1899. (Nos. 1212, 1259, 1287.)

♂, Manggoer Island, 29. ix. 1899. (No. 1421.)

♂, Fathol Island, in the Manggoer group, 7. x. 1899. (No. 1429.)

2 ♂ ♂, Taam Island, 22. vii. 1899. (Nos. 1344, 1351.)

1 ♀, Maar Island, in the Ceram-laut group, 21. xii. 1899. (No. 2029.)

I have hitherto seen *Rhipidura squamata* from the Banda Islands only. It is nevertheless easy to understand that it should also occur on the S.E. Islands. In the Key group it is probably a recent immigrant, as it is not found at Toeal, but only on the outlying islets.

Count Salvadori described a *Rhipidura griseicauda* from Waigin, which he afterwards united with *Rh. squamata*. I am inclined to think that the Count's first view may be after all more correct, and that the birds from Waigin and Salwatty (the new *Hand-list* of Dr. Sharpe adds "New Guinea") are not exactly the same, because we have different forms on the Moluccas.

### 102. *Myiagra galeata goramensis* Sharpe.

(Cf. Nov. Zool. x. 1903. p. 9.)

*Myiagra goramensis* Sharpe, *Cat. B.* iv. p. 386 (1879 : Goram).

3 ♂ ♂, 2 ♀ ♀, Goram, Manawoka, November 1899. (Nos. 1602, 1613, 1614, 1618, 1621.)

6 ♂ ♂, 6 ♀ ♀, Maar, Ceram-laut group, December 1899. (Nos. 1706—1713, 1715—1717, 1748.)

"Iris dark brown, feet black (plumbeous black), bill bluish grey with black tip."

### 103. *Muscicapa griseisticta* Swinh.

*Muscicapa griseisticta* Swinhoe, *Ibis* 1861. p. 330 (China).

♀, Roemadan, Little Key group, 9. iv. 1898. (No. 675.)

♀, Maar, Ceram-laut group, 11. xii. 1899. (No. 1694.)

(Migrant from the north.)

104. *Gerygone keyensis* Bütl.

*Gerygone keyensis* Büttikofer, *Notes Leyden Museum* xv. p. 258 (1893 : Little Key).

7 ♂♂, 1 ♀, Soa, Little Key group, April—May 1898, 1899. (Nos. 668, 680, 684, 695, 1393, 1395, 1396, 1397.)

1 ♀, Eer Island, Little Key group, December 1900.

3 ♂♂, 2 ♀♀, Kilsoein, in the Koer group, June—July 1899. (Nos. 1196, 1197, 1224, 1283, 1284.)

1 ♂, Komeer Island, Koer group, 15. ix. 1899. (No. 1400.)

♂♀, Tiandoe, December 1900.

♂♀, Manggoer Islands, September—October 1899. (Nos. 1427, 1440.)

2 ♂♂, 2 ♀♀, Taam Island, July 1899. (Nos. 1363, 1366, 1389, 1389A.)

The adult birds are underneath white, sides of breast and body rufous brown, crown more or less distinctly ashy. The young birds are above more uniform brown, less rufous brown, but tinged with olive; the under surface is pale sulphur yellow, sides tinged with brown. "Iris yellowish grey, feet plumbeous, bill brownish black." The adult *female* is like the *male*, but smaller; wing about 54, instead of 59—60½ mm.

## XX. CAMPEPHAGIDAE.

105. *Graucalus pollens* Salvad.

*Graucalus pollens* Salvadori, *Ann. Mus. Civ. Gen.* v. p. 75 (1874 : Key).

3 ♂♂, 2 ♀♀, Toeal, on Little Key. (H. Kühn coll., Nos. 1—5.)

♂♀, Add, north of Great Key, 26. vii. 1900. (H. Kühn coll., Nos. 2797, 2798.)

"Iris of a very dark brown (nearly black), bill and feet black."

A young *female* has white edges, narrow and sharply defined, to the remiges and larger upper wing-coverts.

The under wing-coverts of this specimen have rusty-buff edges and cross-bars near the tip, the under tail-coverts whitish tips, and a subterminal blackish bar.

*Graucalus pollens* is only known from the Key Islands.

106. *Graucalus melanops* (Lath.).

*Corvus melanops* Latham, *Ind. Orn. Suppl.* ii. p. xxiv (1801 : hab. in Nova Hollandia).

Toeal, on Little Key.

Soa, near Little Key.

Add, north of Great Key. (No. 2795.)

2 ♀♀, Heinar, in the Tiandu group, 17. vii. 1899. (Nos. 1303, 1305.)

2 ♀♀, Noesreun Island, in the Taam group, 2. ii. 1899. (Nos. 1381, 1382.)

Generally the Key examples have a lighter breast than specimens from Australia and New Guinea.

107. *Edoliisoma dispar* Salvad.

*Edoliisoma dispar* Salvadori, *Ann. M. s. Civ. Gen.* xii. p. 329 (1878 : Key Bandan, 28. vii. 1873 Beccari coll.).

Toeal, on Little Key. (Nos. 8, 96, 138, 162, 214, 292, 758.)

♂, Add, north of Great Key, 30. vii. 1900. (No. 2760.)



8, Teoor, October—November 1899. (Nos. 1451, 1460, 1489, 1528, 1529, 1533, 1535, 1543.)

♂, Manggoer, 9. x. 1899. (No. 1439.)

2 ♂ ♀, Goram, Manawoka group. (Nos. 1624, 1646, 1653.)

2 ♂ ♂, Maar, Ceram-laut, December 1899. (Nos. 1685, 1687.)

#### 108. *Edoliisoma amboinensis* (Hartl.).

*Campophaga amboinensis* Hartlaub, *Journ. f. Orn.* 1865. p. 153 (Amboina : Forster coll. in Mus. Lugd.).

♂ juv., in moult, Maar Island, Ceram-laut group, 11. xii. 1899.

"Iris greyish-brown, bill and feet black." (No. 1686.)

I have no doubt that this specimen, although in that stage of plumage it is most difficult to determine, belongs to *E. amboinensis*, which is known to inhabit Amboina and Ceram, but certainly not Mysol, as erroneously stated in the *Catalogue of Birds*, Vol. IV.

#### 109. *Lalage karu polygrammica* (Gray).

[*Ceblepyris karu* Lesson, *Voy. Coqu. Zool.* i. p. 633 (1828 : New Ireland).]

*Campophaga polygrammica* Gray, *P. Z. S.* 1858. p. 179 (Aru).

2 ♂ ♂, 2 ♀ ♀, Toeal, on Little Key, August, September, October. (H. Kühn coll., Nos. 67, 163, 163A, 163B.)

♂ ♀, Add, north of Great Key, July—August 1900. (Nos. 2781, 2782.)

I have provisionally adopted the above nomenclature for the Key Island form. It certainly differs from the typical *karu* of New Ireland and New Britain in its darker, more clouded, and more strongly barred underside. It seems to me that birds from New Guinea, the Aru and Key Islands are similar, although our material from Arn is scanty, and there may be even more forms. I have not adopted Gray's name *rufiventris*, based on the *Echenilleur à ventre roux* of Hombron and Jacquinot, from Raffles Bay, North Australia, because I doubt that any Australian birds must be united with *L. karu karu*.

Cf. Nov. Zool. 1898. p. 523.

### XXI. ORIOLIDAE.

#### 110. *Sphecotheres flaviventris* Gould.

*Sphecotheres flaviventris* Gould, *P. Z. S.* 1849. p. 111 (Australia, *typ. loc.* Cape York).

Toeal, on Little Key, Elat, on Great Key, Add, north of Great Key, July, September, October. ♂ ad., "Iris brown (dark coffee-brown), bill black, feet pale flesh-colour;" ♀, "Iris brown, bill brownish (brown), feet black (blackish)."

There seems to be no difference between (typical) Queensland and Key birds. Key Islands, Kühn, Webster coll. (Kühn coll., Nos. 54, 108, 180, 215, 217, 245, 2785, 2786; Webster coll., Nos. 5, 74.)

(The absence of *Corvidae* on the islands is most peculiar. The genus *Cracticus*, though common on the Aru Islands, has not extended its range to the Key group.)

## XXII. DICURURIDAE.

111. *Dicrurus megalornis* Gray.

*Dicrurus megalornis* Gray, *P. Z. S.* 1858. pp. 179, 193 (Key Islands).

- ♂ ♀, Tocal, on Little Key, August—September 1899. (Kühn coll., Nos. A, B, C.)  
 ♂, Add, north of Great Key, 25. vii. 1900. (Kühn coll., No. 2796.)  
 ♂ ♀, Teoor, October—November 1899. (Kühn coll., Nos. 1457, 1474, 1475.)  
 ♂ ♀ jun., Kisoci, in the Watoebela group, March 1900. (Kühn coll., Nos. 2114, 2115, 2116, 2117.)  
 ♀ ad., Ondor, on Goram-laut, 24. ii. 1900. (Kühn coll., No. 2147.)  
 ♀, Goram, Manawoka group, November 1899. "Iris vermilion." (No. 1591.)  
 ♂, Kilsocin, Koer group, July 1899. (No. 1275.)

## XXIII. STURNIDAE.

112. *Calornis metallica* (Temm.).

- Large series from Tocal, Little Key, September—November. (Kühn coll., Nos. 12, 68, 204, 309, 310, 315, 323.)  
 ♀, Teoor, October 1899. (Kühn coll., No. 1548.)  
 ♂ ♀ Kisoci, March 1900. (Kühn coll., Nos. 2120, 2121, 2122.)  
 ♂ ♀, Kilsocin, Koer Islands, June—July 1899. (Kühn coll., Nos. 1238, 1270, 1271, 1276, 1278.)  
 ♂ ♀, Goram, Manawoka group, November 1899. (Kühn coll., Nos. 1595, 1611, 1630, 1651, 1657.)

## XXIV. ARTAMIDAE.

113. *Artamus leucorhynchus* (L.).

- ♂, Manggoer (Mangui) Island, 4. x. 1899. (Kühn coll., No. 1419.)  
 ♂ ♀, Taam Island, July 1899. (Kühn coll. Nos. 1335, 1336, 1346, 1348, 1362.)  
 ♂ nestling, "Oeboer," Little Key group, 25. i. 1898. (No. 543.)  
 ♂ ad., "Esmannoek Island," Little Key group, 14. xii. 1897. (No. 471.)  
 ♀ ad., Soa Island, Little Key group, 23. v. 1899. (No. A.)  
 ♀ jun., "Eer Island," Little Key group, 13. xii. 1900. (No. B.)  
 ♂ ad., Pulu Nai, Key Islands, 27. ix. 1899. (No. C.)

## XXV. GRALLINA.

114. *Grallina picata* (Lath.).

♀ ad., Kilsocin, Koer group, 11. vii. 1899. "Iris yellowish white, feet black, bill horn-white with blackish tip." (H. Kühn coll., No. 1274.)

The occurrence of this Australian species as far north as Kilsocin is very strange. Probably the specimen is only a straggler, and it might never again be found on the South-East Islands.

(I am still uncertain about the proper systematic position of *Grallina*.)

## XXVI. LANIIDAE.

115. *Pachycephala rufipennis* Gray.

*Pachycephala rufipennis* Gray, *P. Z. S.* 1858. pp. 178, 192 (Key Islands).

The type is a young bird with chestnut-rufous edges to the secondaries. In the adult bird the remiges are deep brown, margined with olive-brown.

Kühn sent a series from Toeal on Little Key and from Add, north of Great Key. Doherty obtained a *female* at Elat on Great Key. (Kühn coll., Nos. A, 389, 454, 496, 2775, 2777, 2778.)

*Pachycephala rufipennis* is evidently restricted to the Key Islands.

116. *Pachycephala phaionotus* (Bp.).

*Myiolestes phaionotus* Bonaparte (ex Müll. MS. in Mus. Lugd.), *Cons. Av. i.* p. 358 (1850 : Banda).

The diagnosis of Bonaparte is very poor, and even incorrect. Therefore his name should not be adopted, except for the one reason, that the type is in the Leyden Museum, showing to which species the diagnosis refers.

The distribution of this species is very peculiar, as it occurs on Banda, on Tifore, Dammar in the Northern Moluccas, Ternate, Mareh, Motir in the Moluccas, on Mysol, Salwatty and Waigin, and reoccurs on Mafor in the Geelvink Bay, all over the South-East Islands, and on little outlying islands of the Aru group. It evidently shares with a few other land-birds the peculiarity to inhabit very small oceanic islands only, not the neighbouring larger main islands. It has not yet been found on the larger Moluccas (Halmahera, Batjan, Obi, Burn, Ceram), nor anywhere on New Guinea, nor on the larger islands of the Key and Aru groups. (*Caloenas nicobarica* inhabits almost only small islands near larger ones uninhabited by this pigeon; *Tanygnathus megalarhynchus* shuns the main island of Celebes, while occurring on many small islets close to its coasts. The forms of *Astur torquatus* avoid Celebes, though being found on islands close to it. Attention to similar cases will be called in future.)

Mr. Kühn sent the following specimens of *P. phaionotus* :—

A series from Banda.

3 ♂♂, Maar Island, near Ceram-laut, December 1899. (Nos. A, B, 1723.)

6 ♂♂, 3 ♀♀, from Kilsoein and Komeer Islands, in the Koer group. (Nos. 1228, 1234, 1237, 1241, 1288, 1289, 1403, 1410, 1428.)

3 ♀♀, Taam Island, July 1899. (Nos. 1339, 1340, 1347.)

♂♀, Manggoer Island, October 1899. (Nos. 1422, 1424.)

♂, Roemadan Island, Little Key group, 9. iv. 1898. (No. 673.)

♂, Godan Island, Little Key group, 17. v. 1898. (No. 793.)

4 from Pulo Babi, Aru Islands.

117. *Pachycephala kuehni* Hart.

*Pachycephala kuehni* Hartert, *Bull. B. O. C.* viii. p. xiv (November 1898 : Little Key Island).

This species seems to be restricted in its habitat to the Key Islands. It differs from its nearest ally, *P. cinerascens*, of the Northern Moluccas, in being more brownish above, but most strikingly in the colour of the under surface, which is ochraceous buff, tinged with greyish brown on the chest and flanks; while in

*P. cinerascens* the chest is ashy grey, the abdomen white or whitish. The iris is very deep brown, feet and bill black. The *female* differs from that of *P. cinerascens* also in the browner upperside and more reddish buff underside. Its iris is dark brown, bill and feet black. The young bird has a brownish bill, and much wider blackish shaft-stripes than the adult *female*, on a whitish buff underside. The dimensions are those of *P. cinerascens*.

♂ ad., Tochal, Little Key, 11. xi. 1897. (H. Kühn coll., No. 287.) Type of *P. kuchui*.

♂ ad., Tochal, October 1897. (H. Kühn coll., No. 193.)

♀ juv., Tochal, 16. ix. 1897. (H. Kühn coll., No. 82.)

♂ ad., Tochal, 24. viii. 1897. (H. Kühn coll., No. 13.)

♀ in moult, Tochal, 22. viii. 1897. (H. Kühn coll., No. 50.)

1 ♂, 2 ♀ ♀, Tochal, December 1897. (H. Kühn coll., Nos. 386, 469, 495.)

### 118. *Pachycephala tianduana* Hart.

*Pachycephala tianduana* Hartert, *Bull. B. O. Club* xi. p. 53 (March 1901: Tiandu, west of the Key Islands).

This very interesting form of *Pachycephala* belongs to the same group as *P. leucogaster*, *arctitorquis*, and *meeki*. I have no doubt that they should in future all be treated as subspecies of one species, but at present the Tring Museum possesses no specimen of *P. leucogaster*, the first-named form of this group, which I have only been able to compare in the British Museum. Before I have a better series of the latter, and have studied it more closely, I refrain from using trinomials for this group, and as their habitats are far separated no harm can arise from this.

The *male* of my *P. tianduana* resembles that of *P. meeki* (from Rossel Island), but differs in its slightly paler upperside, longer wing, cream-coloured abdomen, and more slaty, less deep black tail. It differs from the *male* of *P. arctitorquis* (from Tenimber and Dammer) in the much darker colour of the upperside, wider black pectoral crescent, and darker tail. The sides of the breast are light grey, slightly tinged with buff, not so grey as in *P. meeki*, and not white as in *P. arctitorquis*.

The two *females* are worn, and apparently both immature. They differ widely from those of *P. meeki* in being brownish, not ashy greyish, above and on the tail, and in being whitish buff or buffy white, instead of rusty-buff, underneath. The *female* of *P. arctitorquis* differs still more, being above brownish cinnamon or cinnamonaceous ashy, and underneath generally less striated. As all the *males* are worn or moulting, the *females* apparently both immature, exact measurements cannot be given, but the wing of the *male* is at least 86 mm. long.

Mr. Heinrich Kühn sent the following specimens :

2 ♂ ad., Tiandu, 19. xii. 1900. "Iris brownish red, bill black, feet dark plumbeous." (Nos. A, type of the name *tianduana*, B.) Both in splendid freshly-moulted plumage, wings still in moult.

1 ♂ ad., Tiandu, 19. xii. 1900, in quite worn plumage, moult only just beginning. (No. c.)

1 ♀ (apparently young), Heniar islet, Tiandu Islands, 17. vii. 1899. "Iris dark brown, bill plumbeous, feet greyish black." (No. 1307.)

1 ♀, Tiandu, 18. xii. 1900. Apparently not quite adult. (No. d.)

## XXVII. MELIPHAGIDAE.

119. *Stigmatops squamata* Salvad.

*Stigmatops squamata* Salvadori, *Ann. Mus. Civ. Gen.* xii. p. 337 (1878: Koer, Rosenberg coll., Mus. Leyden.

4 ad., 2 imm., Kilsoein, Koer group, June 1899. "Iris grey (dark grey), feet plumbeous (dark grey, ashy grey), bill black, brownish black in the young bird." (H. Kühn coll., Nos. 1191, 1203, 1210, 1221, 1232, 1233.)

3 ad., 2 juv., Manggoer, October 1899. "Iris yellowish grey." (H. Kühn coll., Nos. 1420, 1423, 1425, 1437, 1438.)

1 ♂ ad., Fathol Island, Manggoer, October 1899. (H. Kühn coll., No. 1436.)

5 ad., 1 juv., Taam Island, July 1899. "Iris bright grey, bright yellowish grey." (H. Kühn coll., Nos. 1326, 1350, 1353, 1354, 1355, 1358.)

3 ♂♂, 3 ♀ ad., Godan islet, near Little Key, May 1898. "Iris dark brown, feet bright grey." (H. Kühn coll., Nos. 785, 786, 789, 790, 791, 792.)

All these specimens are perfectly alike, the *males* being much larger than the *females*. The young is slightly more greenish, the breast more uniform, not distinctly squamated as in the adult bird. *S. squamata salvadorii* from Tenimber is a much smaller subspecies, but otherwise perfectly similar. (Cf. Nov. Zool. 1900. p. 16, 1901. p. 171.)

120. *Philemon moluccensis plumigenis* (Gray).

*Tropidorhynchus plumigenis* G. R. Gray, *P. Z. S.* 1858. pp. 174—191 (Key Is.).

6, Toetal, Key Islands. "Iris coffee-brown (greyish brown), bill and feet black." (Kühn coll., Nos. 3, 27, 54, 3 without numbers.)

(Cf. Nov. Zool. 1901. p. 171.)

121. *Zosterops chloris* Bp.

*Zosterops chloris* Bonaparte, *Comp. Av.* i. p. 398 (1850: ex Müller MS. in Mus. Leyden, Banda).

*Zosterops rufifrons* Salvadori, *Ann. Mus. Civ. Gen.* vi. p. 79 (Gisser, near Ceram-laut, desc. err.).

*Zosterops brunneicauda* Salvadori, *Ann. Mus. Civ. Gen.* xvi. p. 82 (1880).

4, Ceram-laut, December 1899. "Iris dark chocolate, feet grey, bill black, under mandible bright grey, black towards tip." (H. Kühn coll., Nos. 1765, 1766, 1767, 2028.)

1 ♂, Komeer, Koer I., September 1899. (No. 1401.)

3, Manggoer, October 1899. "Iris chocolate-brown, feet dark ash-grey, bill black, mandible greyish or brownish black. (Nos. 1433, 1434, 1435.)

6, Kilsoein, Koer Is., June—July 1899. (Nos. 1192, 1201, 1211, 1213, 1214, 1278.)

4, Taam I., July 1899. (Nos. 1345, 1356, 1357, 1365.)

1, Teniai, Taam Is., August 1899. (No. 1367.)

6, Soa, near Little Key, April, July 1898. (Nos. 670, 715, 803, 804, 805, 806.)

Dr. Finsch (*Tierreich*, *Lief.* 15, *Zosteropidae*, p. 27, 1901) is evidently correct in uniting *chloris*, *rufifrons*, and *brunneicauda*. It is true that many specimens from Pulu Babi (Arn group), Koer, Soa, Manggoer and Ceram-laut are larger, but others from the same places do not differ from the Banda form—*i.e.* *Z. chloris chloris*. If characters should be found to separate the Pulu Babi, Key and



S.E. Islands form, then the name *Z. rufifrons* must stand for the latter. Specimens in the *rufifrons* plumage are not stained with blood, but it is the juice of a fruit or flower that stains the plumage in such a way, that some specimens are orange all over.

### 122. *Zosterops grayi* Wall.

*Zosterops grayi* Wallace, *P. Z. S.* 1863. p. 494 (Key Islands).

Mr. Kühn sent a series from Add islet, north of Great Key, and one from Elat on Great Key Island, where W. Doherty also obtained a *female*. It evidently does not occur on Little Key (Toaal). Mr. Kühn describes the iris as bright chocolate, the feet as yellowish grey, yellowish plumbeous, bluish grey, the bill as black. (Nos. 106, 2810, 2811, 2812, 2813, 2814, 2816.)

The alleged occurrence of *Z. grayi* on the Arn Islands (teste Rosenberg) is almost certainly erroneous. *Zosterops noraeguineae* is found on the Arn Islands, for we have a specimen shot at Wokan by Mr. Kühn. *Z. noraeguineae* is much smaller than *Z. grayi*, has darker sides and no yellow lores or frontal band.

### 123. *Zosterops uropygialis* Salvad.

*Zosterops uropygialis* Salvadori, *Ann. Mus. Civ. Gen.* vi. p. 78 (1874 : Toaal, Key Islands).

This bird is only known from Toaal, Little Key. Mr. Kühn sent a fine series. The iris he found bright chocolate-brown, the feet bright plumbeous (bright grey, plumbeous), the bill brownish black. (Nos. 21, 115, 148, 261, 265, 369, 453, 489, and some without numbers.)

## XXVIII. NECTARINIIDAE.

### 124. *Cinnyris theresia* (Salvad.).

*Hermotimia theresia* Salvadori, *Atti R. Acc. Sc. di Torino*, x. pp. 208, 214, tab. f. 1 (1874 : Key Islands).

Mr. Kühn sent a series from Toaal and Ohimas islet, near Little Key Island. "Iris very dark brown (black), bill and feet black."

One *female* from Add, north of Great Key. (Kühn, No. 2805).

1 ♂ juv. from Elat, Great Key. W. Doherty coll.

Toaal and Ohimas. (Nos. 22, 365, 366, 368, 446, 475, 511, 679, 699.)

### 125. *Cinnyris aspasia aspasioides* (Gray).

[*Cinnyris aspasia* Lesson, *Voy. Coqu. Zool.* i. p. 676. Pl. XXX. (1828 : typ. loc. Dorey, New Guinea).]

*Nectarinia aspasioides* Gray, *P. Z. S.* 1860. p. 348 (Amboina).

5 ♂♂, Maar, Ceram-laut, December 1899. "Iris, feet and bill black." (Nos. 1701—1704, 1738.)

2 ♂♂, 1 ♀, Ondor, Goram-laut, February 1900. (Nos. 2139, 2144, 2145.)

2 ♂♂, 4 ♀♀, Goram Is., Mauawoka group, November 1899. (Nos. 1594, 1599, 1604, 1619, 1626, 1649.)

This form differs from *C. a. aspasia* in the steel-blue throat without a violet-purple sheen. It can doubtless only be considered as a subspecies of the *aspasia* group, like *chlorocephala*, *cornelia*, *christianae*, *corinna*, *mysorensis*, *maforensis*, and probably others more. In view of the occurrence (if there is no mistake about

it?) of a form of *aspatia* ("jobiensis") and another one near *nigriscapularis* ("salvadorii") on Jobi, we must keep the latter two (*nigriscapularis* and *salvadorii*) specifically separate, and so we may have to do with *theresia* and the *aureiceps* group. Otherwise I should treat them all as subspecies of one species.

## XXIX. DICAEDIDAE.

### 126. *Dicaeum vulneratum* Wall.

*Dicaeum vulneratum* Wallace, *P. Z. S.* 1863. p. 32 (Ceram).

1 ♂, Ondor, Goram-laut, 24. ii. 1900. "Iris deepest brown, bill and feet black." (H. Kühn coll., No. 2138.)

Doherty obtained a *male* on Saparna, a little island east of Amboina, in March 1897.

### 127. *Dicaeum keiense* Salvad.

*Dicaeum keiense* Salvadori, *Ann. Mus. Civ. Gen.* vi. p. 314 (1874: Key Islands).

Common at Toeal, Little Key. 5 ♂♂, 4 ♀♀, 1 pallus, killed 31. x. 1897. (Nos. 48, 86, 89, 114, 147, 257, 263, 391, 447, 701.)

1 ♂, Add, north of Great Key, July 1900. (No. 2804.)

1, Elat, Great Key, February 1897. (Doherty coll.)

4 ♀♀, Teoor, October 1899. (Nos. 1582, 1585, 1586, 1587.)

2 ♂♂, Kilsoein, in the Koer group, July 1899. (Nos. 1260, 1286.) "Iris deep brown (black), bill and feet black."

## XXX. TURDIDAE.

### 128. *Monticola cyanus solitarius* (P. L. S. Müll.)

*Turdus solitarius* P. L. S. Müller, *Natursyst. Suppl.* p. 142 (1776: ex Pl. Enl. 564—Philippines).

1 ♀, 16. ix. 1899, Komcer Island, Koer group. (No. 1402.)  
(Migrant from the north.)

## XXXI. SYLVIIDAE.

### 129. *Locustella fasciolatus* (Gray).

*Acrocephalus fasciolatus* G. R. Gray, *P. Z. S.* 1860. p. 349 (Batjan).

6 ad., 3 juv., Teoor, October 1899. (Nos. 1493, 1497, 1526, 1536—1538, 1573, 1574.)

1 immat., Kisoei, 9. iii. 1900. (No. 2082.)

3 ad., Maar, Ceram-laut group, December 1899. (No. 1690, 1691, 1747.)  
(Migrant from the north.)

### 130. *Phylloscopus borealis* (Blas.)

*Phyllopneuste borealis* Blasius, *Naumannia* 1858. p. 313 (Heligoland).

1 (sex ?), Tooor, 4. xi. 1899. (No. 1525.)

4 ♂♂, 2 ♀♀, Maar, Ceram-laut group, December 1899. (Nos. 1720—1722, 1744, 1745.)  
(Migrant from the north.)

## XXXII. MOTACILLIDAE.

131. *Motacilla flava* L.

4 ♂, 1 ♀, Tiandoc, December 1900.

1 ♂, Teoor, October 1899. (No. 1553.)

3 ♂♂, 2 ♀♀, Maar 1., Ceram-laut, December 1899. (Nos. 1726, 1739—1742.)  
(Migrant from the north.)

132. *Motacilla boarula melanope* Pall.

♂ ♀, Teoor Island, October 1899. (Nos. 1496, 1549.)

(Migrant from the north.)

## XXXIII. PLOCEIDAE.

133. *Munia molucca* (L.)

*Locia molucca* Linn., *Syst. Nat.* ed. xii. 1766. p. 302 (ex Brisson, *Moluccas*).

Toeal, Little Key, common. (Nos. 235, 260, 279, 322, 381.)

♀, Eer Island, Little Key group, 14. xii. 1900.

♂, Heniar Island, Tiandn group, 17. vii. 1899. (No. 1282.)

2 ad., 1 juv., Kilsoein, Koer group, June—July 1899. (Nos. 1202, 1225, 1281.)

3 ad., Kisoei, March 1900. (Nos. 2069—2071.)

2 juv., Taam, July 1899. (Nos. 1360, 1368.)

♂, Goram, Manawoka group, 15. xi. 1899. (No. 1601.)

♀, Maar, Ceram-laut group, 13. xii. 1899. (No. 1709.)

## RALLIDAE (See Nov. Zool. 1901. p. 96).

Add :—

134. *Porphyrio melanotus* Temm. (? subsp.).

“♀” (apparently not fully adult), Mataholat, Great Key, 9. ix. 1898. “Iris bright brown, feet dirty red with black joints, bill vermilion.” (Kühn coll., No. 836.)

This specimen, compared with our series, is extremely small, especially the bill, legs and feet, though the wing is not appreciably smaller. See Dr. Sharpe's notes on p. 206, *Cat. B.* xxiii., about the probable existence of a small (northern) race.

## XXXIV. ARDEIDAE.

135. *Nycticorax caledonica* (Gm.)

*Ardea caledonica* Gmelin, *Syst. Nat.* i. p. 626 (1788: ex Latham, New Caledonia! Specimens from New Caledonia should be compared! ♀)

4 ad., Toeal. (Kühn coll., Nos. 499, 527, 619, 798.)

1 juv. in first plumage, Toeal, 28. viii. 1898. (No. 1390.)

♀ ad., Kilsoein, Koer, July 1899. (No. 1301.)

♂ ad., Manggoer, September 1899. (No. 1448.)

♀ ad., Teoor, October 1899. “Iris chromeous, feet pale sulphureous, bill black, under mandible greenish yellow.” (No. 1584.)

2 ♂ ad., Taam, July—August 1899. (Nos. 1383, 1385.)

136. *Demiegretta sacra* (Gm.).

*Ardea sacra* Gmelin, *Syst. Nat.* i. p. 640 (1788: ex Latham, Tahiti).

A series from Toعال (♂ ad. in nuptial plumage, 6. iv. 1898) in slaty-grey, white and spotted plumage. (Nos. 276, 655, 709, 710.)

♂ ad. (slate), Teoor, October 1899. (No. 1515.)

♂ ad. (white), Taam Islands, August 1899. (No. T. 1015.)

2 ad. (white and slate), Manggoer, September 1, 1899 (moulting). (Nos. 1411, 1412.)

1 ♀ (slate), Ondor, Goram-lant, February 1900. (No. 2193.)

137. *Butorides javanica* (Horsf.) (? subsp.).

3 ad., juv., Toعال. (Nos. 303, 497, 621.)

2 ad., juv., Oeboer, Little Key. (Nos. 827, 828.)

1 ad., Add, north of Great Key, July. (No. 2823.)

These specimens are smaller than *stagnatilis*, and the adult birds have no distinct blackish spots along the throat and foreneck. *B. stagnatilis*—which, according to Dr. Sharpe's distribution (*Cat. B.* xxvi.), should occur on the Key Islands, is, of course, only a subspecies of *B. javanica*, like the large-billed *amurensis* and the dark-bellied *spodiogaster*.

138. *Ardetta sinensis* (Gm.).

*Ardea sinensis* Gmelin, *Syst. Nat.* i. p. 642 (1788: ex Latham, China).

♀, Elat, Great Key, 23. ix. 1897. (No. 101.) Bill very short. A series should be compared!!

139. *Notophoyx novaehollandiae* (Lath.).

*Ardea novaehollandiae* Latham, *Ind. Grn.* ii. p. 701 (1790).

♀, Toعال, 7. vi. 1898. (No. 800.)

♀, Manggoer, 1. x. 1899. (No. 1444.)

"Iris whitish yellow or whitish chromeous, feet bright chrome-yellow or chromeous, bill jet-black (black), base of mandible greyish."

140. *Notophoyx aruensis* (Gray).

♂ ♀, Toعال, 13. 14. v. 1898. (Nos. 1756, 1757.) "Iris bright yellow, feet yellowish grey, bill greenish yellow" (H. Kühn).

141. *Herodias alba timoriensis* (Less.).

*Ardea timoriensis* Lesson, *Tr. d'Orn.* p. 575 (1831: ex Cuvier MS., Timor).

♂ ad., Toعال, 13. i. 1898. "Iris whitish yellow, bill ochreous, feet black." (Kühn coll., No. 500.)

142. *Garzetta garzetta nigripes* (Temm.).

*Ardea nigripes* Temminck, *Man. d'Orn.* iv. p. 376 (1840: Ind. Arch.).

♂ ♀, Toعال, 12. 17. i. 1898. "Iris whitish yellow, feet black, bill black and yellow." (Kühn coll., Nos. 501, 502.)

XXXV. ANATIDAE.

143. *Tadorna radjah* (Garn.).

*Anas radjah* Garnot, Voy. Coqu. Zool. i. 2. p. 302 (1828 : Burn).

2 ♂♂, Ondor, Goram-laut, February 1900. "Iris white, bill and feet white."  
(Kühn coll., Nos. 2072, 2073.)

These birds agree with those from Burn, and are typical *radjah*.

144. *Dendrocygna guttata* Schleg.

*Dendrocygna guttata* Schlegel, Mus. P. B., Anseres p. 85 (1866 : Celebes, etc. Type Celebes Descr. princeps!).

Ohoitil and Hotil, Little Key Islands, February 1898. (Nos. 514, 516, 528.)

145. *Anas gibberifrons* S. Müll.

*Anas gibberifrons* S. Müller, Verh. Land- und Volkenk. p. 159 (1839-44 : Celebes).

♀ ad., Oen, close to Toeal, Little Key Islands, 1. v. 1898. "Iris golden ochreous, feet black, bill dark grey (nearly black)." (No. 770.)

XXXVI. STEGANOPODES.

146. *Phalacrocorax sulcirostris* (Brandt).

1 ♂ ad., Toeal, 2. v. 1900. "Iris dark leaf-green, feet and bill black."

2 ♂♂, Ondor, Goram-laut, 25. ii. 1900. (Nos. 2191, 2192.)

147. *Phalacrocorax melanoleucos* (Vieill.).

1 ♀ ad., Toeal, 1. iv. 1900. "Iris pale yellow, feet black, bill pale ochreous to yellow with black culmen." (Kühn coll.)

1 ♀, Walir islet, Tiandoe group, 18. vii. 1899. "Iris bright grey." (Kühn coll., No. 1387.)

1 ♀, Teoor, 5. xi. 1899. "Iris yellowish white." (Kühn coll., No. 1541.)

1 ♀, Taam, 24. vii. 1899. "Iris bright grey." (Kühn coll., No. 1388.)

♂ ♀, Manggoer, 1. x. 1899. "Iris whitish yellow." (Kühn coll., Nos. 1445, 1447.)

148. *Sula sula* (L.).

1 ♀ jun., Goram, Manawoka group, 16. xi. 1899. (No. 1762.)

149. *Fregata aquilus* (L.).

1 "♀" (juv.), Manggoer, 30. ix. 1899. (H. Kühn coll.)

150. *Fregata ariel* (Gonld).

1 ♂ ad., Toeal, 10. i. 1898. (H. Kühn coll., No. 358.)

1 ♂ ad., 1 ♀, Soa, near Little Key, 11. vii. 1898. (H. Kühn coll., Nos. 798, 799.)

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